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National Training Center and Fort Irwin

Installation Action Plan

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Installation Action Plan

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Restoration Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

The IRP is specifically focused at contamination resulting from past activities, and is funded by the centrally-managed Environmental Restoration, Army (ER,A) budget account. Cleanup activities directed at contamination primarily resulting from current operations are separately funded and managed, and, although mentioned where relevant, will not generally be discussed in detail in an IAP.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Fort Irwin. The IAP is used to track requirements, schedules, and budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change. Under current project funding, all remedies will be in place at Fort Irwin by the end of 2007.

The following agencies contributed to the formulation and completion of this Installation Action Plan:

DTSC

EEI for US Army Environmental Center

Fort Irwin, DPW

Fort Irwin Environmental Division

Fort Irwin, Office of the Staff Judge Advocate

Regional Water Quality Control Board

U.S. Army Environmental Center - Restoration Manager

U.S. Army Corps of Engineers, Sacramento District

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Acronyms & Abbreviations

AEDB-R	Army Environmental Database - Restoration (formerly DSERTS)
AOC	Area of Concern
AST	Aboveground Storage Tank
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CAO	Clean Up and Abatement Order
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CESPK	U.S. Army Corps of Engineers, Sacramento District
CESPL	U.S. Army Corps of Engineers, Los Angeles District
COE	U.S. Army Corps of Engineers
CY	Cubic Yards
DA	Department of Army
DD	Decision Document
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DPW	Directorate of Public Works
DSERTS	Defense Site Environmental Restoration Tracking System (now AEDB-R)
DTSC	Department of Toxic Substances Control
EECA	Engineer Evaluation/Cost Analysis
EPA	United States Environmental Protection Agency
ER,A	Environmental Restoration, Army (formerly DERA)
FORSCOM	U.S. Army Forces Command
FS	Feasibility Study
FY	Fiscal Year
GW	Groundwater
GWM	Groundwater Monitoring
HW	Hazardous Waste
IAP	Installation Action Plan
IAG	Interagency Agreement
IR	Information Repositories
IRA	Interim Remedial Action
IRP	Installation Restoration Program
JP-8	Jet Propellant Number Eight
LTM	Long-term Monitoring
LTO	Long-term Operation
MATES	Mobilization and Training Equipment Site
MCL	Maximum Contaminant Level
MLA	Military Construction, Army
MMRP	Military Munitions Response Program
NAVFAC	Naval Facilities Engineering Command
NE	Not Evaluated
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NON	Notice of Noncompliance
NOV	Notice of Violation
NPL	National Priorities List
NTC	National Training Center
OB/OD	Open Burning/Open Detonation
OMA	Operations and Maintenance - Army

Acronyms & Abbreviations

OWS	Oil and Water Separator
POL	Petroleum, Oil and Lubricants
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCE	Perchloroethylene
PPB	Parts Per Billion
PPM	Parts Per Million
PY	Prior Year
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RAP	Remedial Action Plan
RAW	Remedial Action Workplan
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
RWQCB	Regional Water Quality Control Board
S&A	Supervision and Administration
SI	Site Inspection
S&R	Supervision and Review
STP	Sewage Treatment Plant
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leachate Procedure
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
USATHMA	United States Army Toxic and Hazardous Material Agency (replaced by USAEC)
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compounds

Summary

STATUS

No NPL sites have been identified at Fort Irwin.

NUMBER OF AEDB-R SITES:

43 AEDB-R sites
- 7 Active ER,A Eligible Sites
- 32 Response Complete ER,A Eligible Sites
- 4 Response Complete Non-ER,A Eligible Sites

14 MMRP sites

DIFFERENT SITE TYPES:

1 Fire/Crash Training Area	2 Surface Disposal Areas
5 Disposal Pits/ Dry Wells	1 Sewage Effluent Settling Pond
1 Firing Range	1 Incinerator
7 Landfills	1 Pesticide Shop
4 Storage Areas	1 Surface Impoundment/ Lagoon
1 Small Arms Range	1 AST
5 USTs	2 Mixed Waste Area
1 Waste Treatment Plant	9 Explosive Ordnance Disposal Area

CONTAMINANTS OF CONCERN:

Metals, POLs, Explosives, Chlorinated Solvents, Dioxins.

MEDIA OF CONCERN:

Soil and Groundwater

COMPLETED REM/IRA/RA:

- 31 USTs were removed from 1992-1993 (Non-DERA funds were used)
- 3 USTs were removed during 1993
- Fence installed around FTIR-02 and FTIR-04
- Floor channel decontaminated and closed at FTIR-11
- Pit decontaminated and closed at FTIR-35
- Surface debris removed from FTIR-03
- Removal of debris at FTIR-32
- Native soil cover and drainage controls at FTIR-02 and FTIR-04

CURRENT IRP PHASES:

RI/FS: 3 sites RA: 2 sites LTM: 2 sites

PROJECTED IRP PHASES:

RI/FS: 2 sites RD: 1 site RA: 1 site LTM: 3 sites

IDENTIFIED POSSIBLE REM/IRA/RA:

- Groundwater treatment at FTIR-01
- Soil removal at FTIR-38, 40

DURATION:

YEAR OF IRP INCEPTION:	1991
YEAR OF IRP COMPLETION EXCLUDING LTM:	2007
YEAR OF IRP COMPLETION INCLUDING LTM:	2032

Installation Information

SITE DESCRIPTION:

The National Training Center at Fort Irwin encompasses an area of ~110,000 acres in the Mojave Desert. Fort Irwin is located 35 miles northeast of the City of Barstow in San Bernardino County, California.

IRP EXECUTING AGENCIES:

Fort Irwin Environmental Division & Directorate of Contracting
U.S. Army Corps of Engineers, Sacramento District
U.S. Army Corps of Engineers, Los Angeles District

REGULATORY PARTICIPATION:

Federal: U.S. Environmental Protection Agency, Region IX
State: Department of Toxic Substances Control, Region IV
California Regional Water Quality Control Board, Lahontan Region
California Department of Fish and Game
California Integrated Waste Management Board
Mojave Desert Air Quality Management District

REGULATORY STATUS:

- None of Fort Irwin's sites are on the National Priorities List.
- A Clean Up and Abatement Order (CAO) was issued for FTIR-20. A Notice of Noncompliance (NON) was issued for FTIR-20 in November 1994. The CAO for FTIR-20 was rescinded in May 1996. This site was officially closed in May 1996, resolving the CAO and NON.
- A CAO was issued for FTIR-11 in June 1986. A Notice of Violation (NOV) was issued for FTIR-11 in 1988.
- Notice of Violations (NOVs) were issued for FTIR-07 in May 1989 and rescinded in 1992.
- A Federal Facility Compliance Agreement was completed in 1993. This agreement applies to FTIR-11, FTIR-20, and FTIR-22.

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR:

None

Installation Description

Fort Irwin is located approximately 35 miles northeast of Barstow, California. It encompasses 110,000 acres in the Mojave Desert. Fort Irwin is bounded on the west by the U.S. Naval Weapons Center, China Lake; on the north by the Death Valley National Monument; and on the south and east by land under the jurisdiction of the U.S. Bureau of Land Management (BLM).

The land within Fort Irwin's boundaries has three primary uses by the Army: ranges, maneuvers, and the cantonment area. The ranges are used for military training including heavy mechanized vehicle maneuvers, gunnery training, and live fire exercises. Approximately 65% of Fort Irwin is designated as ranges. The cantonment area includes administrative facilities, family housing, troop housing, medical facilities, helipads, schools, recreational facilities, maintenance, warehouse and storage areas, hazardous waste storage and other general facilities. The cantonment area is ~15,000 acres in size which is less than 2% of the Installation's total area. Approximately 37 sq. miles of Fort Irwin has been leased to NASA. This area, known as Goldstone Deep Space Complex, is used for deep space radio antennae and satellite tracking systems. Approximately 350 sq. miles at the northern boundary of the installation is used by the U.S. Air Force as a gunnery range (Leach Lake Air to Air & Air to Ground Range). The remaining land is designated as recreational, off-limits for environmental and/or archaeological reasons, or non-trafficable.

HISTORY

On August 8, 1940, President Franklin D. Roosevelt established the Mojave Army Antiaircraft Range (MAAR). The War Department withdrew approximately 640,000 acres of land from public use to provide a range where training in the use of antiaircraft weapons could be conducted without interruption.

In addition to use by the Regular Army, the California Institute of Technology used the area around Goldstone Dry Lake to test weapons for the Navy (i.e. Project Mousetrap: testing of an antisubmarine weapon).

The Desert Training Center (DTC) was established in 1942 with General George S. Patton as the first commanding general. The DTC was located in both California and Arizona, encompassing a small portion of the present day Fort Irwin. The DTC operated for 13 months before the military could no longer afford to maintain it.

MAAR was renamed Camp Irwin on November 4, 1942. The camp was named for Major General George Leroy Irwin, a World War I battle commander of the 57th Field Artillery.

Many famous units trained at Camp Irwin during World War II, including the Desert Commandos of North Africa fame. The camp also served as an internment site for prisoners of war.

In December 1944, with World War II nearing a successful completion, Camp Irwin was deactivated. Under Executive Order, President Franklin D. Roosevelt transferred jurisdiction of the lands to the U.S. Department of the Interior.

On July 16, 1951, Camp Irwin was reactivated to serve as a training ground for troops involved in the Korean Conflict. Camp Irwin's size and location were important factors in its reactivation for tank training and large-scale war games. During this period, Camp Irwin was under the command of the U.S. Sixth Army, headquartered at the Presidio of San Francisco, California. Units which trained at Camp Irwin during this period included: 526th Ordnance Company; regimental tank companies of the 43rd Infantry Division; the 378th Ordnance Company; and the

53rd Transportation Company. The Armored Combat Training Center was also located here at that time.

On August 1, 1961, the status of the installation was upgraded to a permanent installation. At this point, Camp Irwin was renamed Fort Irwin and the Armor and Desert Training Center was established there. Fort Irwin served as an armor and artillery firing desert training center for various units of the Active Army, the National Guard, and the Army Reserve in the Fifth and Sixth U.S. Army areas.

In January 1971, as the Vietnam War was winding down, Fort Irwin was closed and placed on caretaker status under the control of Fort McArthur, California.

In 1972, Fort Irwin was turned over to the State of California. From 1972 to 1980, the installation was used as a training area for troops of the California Army National Guard.

In 1976, Major General Paul Gorman introduced the idea of having a large scale training area to simulate actual warfare. The Army needed a large area of land that was isolated from civilization. Fort Irwin, located in the Mojave Desert, 35 miles from the closest town, fit the Army's criteria.

In August 1979, Fort Irwin was selected as the site for the Army's National Training Center. In October 1980, the National Training Center was activated with the mission of "improving FORSCOM unit readiness through training by providing a unique atmosphere and environment for training at battalion force combined arms level.". In July of 1981, the active Army reactivated Fort Irwin under FORSCOM to support the National Training Center.

MISSION

The current mission of the National Training Center is to improve U.S. Army unit readiness through a unique armored training experience for Active Army units; to collect data on training exercises under near-battlefield conditions; and to evaluate the performance and effectiveness of the Army's organization, equipment, doctrine, and training.

Fort Irwin's mission is to provide support for assigned, attached, tenant, and training units.

Units from all over the United States come to Fort Irwin to participate in simulated war games. These units are called the Blue Force (BLUFOR).

Their opponents are known as the OPFOR, for opposing force. The OPFOR are highly trained and skilled professionals well versed in the former Soviet doctrine and are rarely defeated on the battlefield.

Specially trained observers, known as Observer Controllers (OCs), watch the battles and give departing units complete After Action Reviews highlighting their strengths and weaknesses.

Contamination Assessment

Site Investigations and ground water monitoring at NTC, Fort Irwin have been conducted by Fort Irwin, the US Army Environmental Center (AEC), US Army Environmental Hygiene Agency (AEHA), and US Geological Survey (USGS) in various areas throughout the installation since 1982. The major contaminants of concern are metals, POLs, chlorinated solvents, dioxins, and explosives. A listing of the relevant environmental studies that have been performed to date begins on Page 3 of this section.

The Installation Assessment, performed by US Army Toxic and Hazardous Materials Agency (USATHAMA) in 1982, identified thirty-one potentially contaminated sites (SWMUs). Of the 31 sites, 8 landfill and disposal areas were identified. This assessment stated that only one landfill received small quantities of hazardous wastes (pesticide cans, pesticide-contaminated soil, asbestos, ammunition, and flares). However, preliminary assessments performed from 1991 to 1993 found that most of the landfills received hazardous waste in one form or another. Any future action responsibilities for FTIR-34, Goldstone Former Echo Landfill have been transferred to NASA.

The information regarding the materials disposed of at Lucky Fuse Disposal Site (FTIR-07) and Avawatz Valley Disposal Area (FTIR-08) is limited and somewhat contradictory. Most of the documentation does not differentiate between these two sites. However, these two areas combined reportedly received 13.6 metric tons of hazardous waste from Edwards Air Force Base and other sources. Additionally, these sites may have received 2.5 metric tons per month of waste materials containing explosives for an indeterminate amount of time ending no later than 1985. After extensive sampling, no significant contamination was found.

The assessment report indicated the majority of SWMUs required monitoring/sampling-analysis or corrective action in order to satisfy 40 CFR 264.101 for the RCRA Part B permit application requirements. The assessment recommended groundwater monitoring be conducted at FTIR-01 and FTIR-02, and surface and subsurface soil samples be analyzed at FTIR-06, FTIR-07, FTIR-12, FTIR-21 to FTIR-25F.

A Cleanup and Abatement Order (CAO#86-19) was issued by the CRWQCB on 24 JUN 86 for FTIR-11. In 1988, the CRWQCB issued a Notice of Violation of CAO#86-19. At that time, soil contamination (POL) levels were determined to be above cleanup levels. Further investigation of this site was performed during the RI field work in June 1996. This RI report was completed in 1999.

In 1988, the CRWQCB informed Fort Irwin that FTIR-07 was subject to the Solid Waste Assessment Test (SWAT) regulations and had been placed on the statewide list of sites. Fort Irwin petitioned to have this site removed from this list. The request was rejected and a Notice of Violation was issued on May 11, 1989 due to the non-submission of a SWAT proposal. The proposal was prepared in 1990. In 1992, the CRWQCB notified the installation that the preparation of the 1990 SWAT proposal had corrected the 1989 Notice of Violation.

CAO#6-89-45 was issued on 21 FEB 89 for FTIR-20, the Abandoned Fire Fighting Training Facility. A NON with this CAO was issued on 20 DEC 94 for failure to provide groundwater monitoring reports. The CAO was rescinded on 28 NOV 95 and FTIR-20 was officially closed out by the State of California 03 MAY 96.

In August 1993, the Federal Facility Compliance Agreement was completed between the installation and the U.S. Environmental Protection Agency. This agreement required investigation at FTIR-22, Trinity Range; FTIR-11, Drainage Pit (Building 830); and FTIR-20, Abandoned Fire Fighting Training Facility.

Forty three sites are currently listed in the Defense Site Environmental Restoration Tracking System (DSERTS). FTIR-21: New Fire Fighting Training Facility was never constructed. FTIR-37 was combined with FTIR-14 due to geographical location. FTIR-25A was combined with FTIR-07 due to geographical location and similar disposal activities. FTIR-42 was combined with FTIR-41 due to geographical location and similar disposal activities. As a result, FTIR-21, FTIR-25A, FTIR-37, and FTIR-42 have been deleted from DSERTS.

Of the Active ER,A Eligible sites, groundwater contamination has been detected at FTIR-01, 02, 04 and 11. Groundwater is currently being monitored at FTIR-01, 02 and 04. Based on sampling conducted to date, FTIR-06, 07, 08, 18, 25E, 32, 38, 39, and 41 pose no threat to groundwater. Under current land uses, preliminary human health risk assessments indicate that FTIR-02, 04, 06, 07, 08, 11, 18, 25E, 32, 39, and 41 do not pose a risk to human health that exceeds the regulatory guidelines. Landfills FTIR-02 and FTIR-04 received additional soil cover in 1999 to meet cover guidelines. FTIR-38 will have soil action in 2000 to reduce the risk of lead in the soil.

PREVIOUS STUDIES

Title	Author	Date
Erosion Repair Report at Abandoned Landfill FTIR-02	GEOFON, Inc.	2000
NFA RAP for FTIR-12	Montgomery Watson	2000
NFA RAP for FTIR-16	Montgomery Watson	2000
NFA RAP for FTIR-18	Montgomery Watson	2000
Hydrogeological Characterization Study of the FTIR-01 Area	Montgomery Watson	2000
Closure and Post- Closure Maintenance Plan for FTIR-02 & 04	Montgomery Watson	1999
Semi-Annual Groundwater Monitoing Report for April 1999	Montgomery Watson	1999
WorkPlan Installation of K-Rail Barriers	GEOFON, Inc.	1999
Supplemental Remedial Investigation for Lucky Fuse Site	Montgomery Watson	1999
Remedial Investigation for Avawatz Valley Disposal Site and Site Inspection for OB/OD Volume I-V	Montgomery Watson	1999
Closure and Post-Closure Maintenance Plans for FTIR-02, 04	Montgomery Watson	1998
MCACES Cost Estimate for FTIR-02, 04	Montgomery Watson	1998
Data Summary/ Site Inspection for 25E, 32A (Upper and Lower), 32B, 38, 39, 40	Montgomery Watson	1998
Site Inspection of FTIR-32A (Lower), 38, 39, 40	Montgomery Watson	1998
Field Activities Report - Building 830 (FTIR-11) Decontamination and Concrete Placement in Floor Drain	GEOFON, Inc.	1998
Field Activities Report - Building 650 (FTIR-35) Decontamination, Backfill, and Concrete Placement	GEOFON, Inc.	1998
Well Abandonment at the FFTF (FTIR-20)	GEOFON, Inc.	1998
Field Activities Report - Remove Surface Debris and Provide UXO Construction Support at FTIR-03	Environmental Chemical	1998
Supplemental SI for FTIR-32A (Lower Goat Mountain Landfill), -38, -39, and -40	Montgomery Watson	1998
Site Inspection for Troop Landfill (FTIR-06) and Goldstone Former Echo Landfill (FTIR-34)	Parsons Engineering Science	1998
Site Inspection for Lucky Fuse Site (FTIR-07 and 25A)	Parsons Engineering Science	1998
Remedial Investigation for Avawatz Valley (FTIR-08 and 25E)	Parsons Engineering Science	1998
Site Inspection for Various Sites (FTIR-11, 12, 16, 18, 19, 33, 35, 36)	Parsons Engineering Science	1998
Site Inspection for Trinity Range (FTIR-22) and Combat Engineers Range (FTIR-41)	Parsons Engineering Science	1998
Groundwater Hydrology and Water Quality of Irwin Basin	USGS	1997
Workplan - Surface Unexploded Ordnance Clearance and Surface Debris Removal at FTIR-03	Environmental Chemical	1997
Remedial Action Plan for Fort Irwin's Abandoned Landfills (FTIR-02, 04)	Montgomery Watson	1997
Water Quality Monitoring Plan for Fort Irwin Sanitary Landfill	Montgomery Watson	1997
Tech Memo, Asphalt Cap Remedial Alternative for FTIR-02	Montgomery Watson	1997
Sampling and Analysis Plan for Various Washrack Facilities (FTIR-15)	OHM Remediation Services	1997
Soil Sample Collection at Wash Rack 641 (FTIR-15)	OHM Remediation Services	1997
Site Health and Safety Plan for Work Plans at FTIR-11, 20, 35	GEOFON, Inc.	1997
Work Plan Building 830 (FTIR-11), Floor Drain Decontamination and Placement of Concrete	GEOFON, Inc.	1997
Work Plan Building 650 (FTIR-35), Decontamination, Backfill, and Placement of Concrete	GEOFON, Inc.	1997
Work Plan Well Abandonment at the Former Fire Fighter Training Facility (FFTF)(FTIR-20)	GEOFON, Inc.	1997
Site Inspection of Seven Sites: FTIR-25E, 32(A1,A2,B), 38, 39, 40	Montgomery Watson	1997
Community Relations Plan for Fort Irwin’s Installation Restoration Program	Montgomery Watson	1996
Remedial Investigation/ Feasibility Study Report, Fort Irwin Abandoned Landfill	Montgomery Watson	1996
Abandoned Landfills Monitoring Well Installation Summary Report	Ecology & Environment	1995
Abandoned Landfills, June 1995, Quarterly Monitoring Well Sampling Report	Ecology & Environment	1995
Abandoned Landfills, March 1995, Quarterly Monitoring Well Sampling Report	Ecology & Environment	1995
Abandoned Landfills, November 1994 - September 1995, Quarterly Monitoring Well Sampling Report	Ecology & Environment	1995
FI-04 Landfill Excavation Findings, The National Training Center, Fort Irwin,	Ecology & Environment	1995
Quality Control Report, RI/FS: Abandoned Landfills	Montgomery Watson	1995
Remedial Investigation/Feasibility Study Work Plan: Abandoned Landfills	Montgomery Watson	1995
Project Workplan for the Site Inspection and Remedial Investigation of 31 Sites	Parsons Engineering Science	1995
Abandoned Landfill Excavation Plan	Ecology & Environment	1994
Project Workplan for Site Investigation (2 volumes)	Engineering Science	1994
Report of Airborne Ground-Penetrating Radar Surveys	Engineering Science	1994

PREVIOUS STUDIES

Title	Author	Date
Air Monitoring Work Plan, Fort Irwin Abandoned Landfills	Montgomery Watson	1994
Site Investigation Report, Aerial Geophysical Survey Technical Memorandum, Fort Irwin Abandoned Landfills	Montgomery Watson	1994
Water Quality Monitoring/Sampling Plan, Lucky Fuse Disposal Site (FTIR-07)	Parsons ES	1994
Workplan for Conducting Airborne Geophysical Surveys and Aerial Reconnaissance at Selected Sites	Parsons ES	1994
Preliminary Draft Environmental Impact Statement for the Army's Land Acquisition Project for the NTC	USACE	1994
Quarterly Sampling Event for the Fire Fighting Training Facility (FTIR-20)	USACE Sacramento	1994
Site Investigation Report for the Fire Fighting Training Facility FFTIR-20)	USACE Sacramento	1994
Groundwater Monitoring Wells Analysis (13 September 1993)	Mittelhauser Corporation	1993
Groundwater Monitoring Wells Analysis (2 June 1993)	Mittelhauser Corporation	1993
Draft Literature Review and Site Familiarization Report: 10 OB/ OD Sites	Parsons Engineering Science	1993
Draft Literature Review and Site Familiarization Report: 259th EOD Range (Trinity Range) (FTIR-22) and Combat Engineers Range OB/ OD Sites (FTIR-43)	Parsons Engineering Science	1993
Draft Literature Review and Site Familiarization Report: Avawatz Valley (FTIR-08)	Parsons Engineering Science	1993
Draft Literature Review and Site Familiarization Report: DDT/ Lead Based Paint (FTIR-09)	Parsons Engineering Science	1993
Draft Literature Review and Site Familiarization Report: Six Miscellaneous Sites	Parsons Engineering Science	1993
Draft Literature Review and Site Familiarization Report: SWMUs	Parsons Engineering Science	1993
Draft Environmental Compliance Assessment Report, Correction Action noted for 1-63rd, and Goat Mt., 21 May	Radian Corporation	1993
Fire Fighting Training Facility Site (FTIR-20) Characterization Work Plan	USACE , Sacramento	1993
Closure Plan Hazardous Waste Storage Facility, Building 703	Battelle Memorial Institute	1992
Closure Plan Trinity Range OB Area (FTIR-22)	Battelle Memorial Institute	1992
Contingent Post-Closure Plan HWMUs at Selected Maintenance Facilities	Battelle Memorial Institute	1992
Closure Plan HWMUs at Selected Maintenance Facilities	Earth Technology Corp.	1992
Work Plan IRP Lucky Fuse Disposal Area (FTIR-07) PA/ SI, Preliminary CRP	Ecology & Environmental	1992
Geological Survey (discusses fault zones)	Louisiana State University	1992
Final Submittal for Decontamination Building 830 (FTIR-11)	MESA Engineering, Inc.	1992
Environmental Assessment Seismic Reflection Profiling Program	MHA Inc.	1992
Groundwater monitoring Wells Analysis (30 December 1992)	Mittelhauser Corporation	1992
Monitoring Well Results for the Fire Fighting Training Facility (FTIR-20)	Mittelhauser Corporation	1992
U.S. Army Corp. of Engineers, 1st & 2nd Quarter Sampling Report	Mittelhauser Corporation	1992
Compliance Assessment USTs for Motor Vehicle Fuels	Battelle Memorial Institute	1991
Plan of Action for the Underground tank Monitoring Program	Church Engineering Inc.	1991
Avawatz Valley (FTIR-08) Sampling and analysis Report	Earth Technology Corp.	1991
Compliance Assessment USTs for Used POL	Earth Technology Corp.	1991
Hazardous Waste Management Performance Report	Fugro-McClelland Inc.	1991
Waste Analysis Plan Final report	Fugro-McClelland Inc.	1991
Clean-Up and Closure Plan for Drainage Pit at Building 830 (FTIR-11)	Gereiner, Inc.	1991
Clean-Up and Closure Plan for the Fire fighting Training Facility (FTIR-20)	Gereiner, Inc.	1991
Clean-Up and Closure Plan for the POL Contaminated Soil Pile at the Sanitary Landfill	Gereiner, Inc.	1991
Closure Plan HW Storage Facility, Building 703 (FTIR-13)	Earth Technology Corp.	1990
Federal Facility Preliminary Assessment/ Site Inspection Review	Ecology & Environment	1990
Solid Waste Quality Assessment Test (SWAT), Project #11789, lucky Fuse Disposal Site (FTIR-07)	Environmental Profiles Compliance Engineering	1990
Soil Contamination Investigation, Fire Fighting Training Facility (FTIR-20)	Geotechnical Professionals Inc. (For Greiner, Inc.)	1990
Remedial Investigation Drainage Pit at Building 830 (FTIR-11)	Greiner, Inc.	1990
Soil Contamination Investigation at Drainage Pit near Building 830 (FTIR-11)	Greiner, Inc.	1990
Letter Report - Fort Irwin - Groundwater monitoring Wells	Hinkle, R.D.	1990
Final Summary Report of Treatment of Chromium Contaminated Soils, ToxCo, Division of Thorne Environmental, Inc.	McLaughlin Enterprises (ToxCo)	1990
The Mineral Resources Potential Geology and Abandoned Mines	Rapp, J.S. et al	1990
Environmental Assessment for the NTC FTIR Ramp Up	US NTC	1990

PREVIOUS STUDIES

Title	Author	Date
Fort Irwin Wastewater Treatment Plant Waste Discharge Report	Church Engineering Inc.	1989
Report Findings - Fort Irwin, Old Sewage Pond/ Sump Area Project #3E-1031	Thorne Environmental	1989
Water Basin Development Plan, Final Report	Wilson F. So. & Associates	1989
Work Plan for Site Investigation & Closure of Fire Fighting Training Facility (FTIR-20)	Woodward-Clyde Consultants	1989
Operating Manual, Dryer for Wash Rack Sludge	Almgren & Koptionak, Inc.	1988
Closure Plan for Hazardous Materials Storage Area	Brown & Caldwell	1988
Wastewater Treatment Plant Operation and Facilities Review	Church Engineering Inc.	1988
Treatment of Chromium Contaminated Soils	ToxCo, Inc.	1988
Hazardous Waste Consultation No. 37-26-1075-89, Evaluation of Soil Waste Management Units	U.S. Army Environmental Hygiene Agency	1988
Environmental Operations Review No. 32-24-7037-88	U.S. Army Environmental Hygiene Agency	1988
Hazardous Waste Consultation No. 37-26-0175-88, Evaluation of Solid Waste Management Units	U.S. Army Environmental Hygiene Agency	1988
Test Production Drilling Aquifer Test Results, March 16	Wilson F. & Associates	1988
Investigation of Soil Contamination at the Avawatz Valley Disposal Site	Almgren & Koptionak, Inc.	1987
Investigation of Soil Contamination at the Lucky Fuse Disposal Site	Almgren & Koptionak, Inc.	1987
Investigation of Soil Contamination at the Troop Landfill Disposal Site	Almgren & Koptionak, Inc.	1987
Closure Certification of Waste Piles, Fort Irwin Waste Water treatment Plant	Brown & Caldwell	1987
Environmental Audit of 581st Maintenance Shop	Brown & Caldwell	1987
Environmental Audit of 1st/ 73rd Armor Battalion Maintenance Shop	Brown & Caldwell	1987
Environmental Audit of 31st Maintenance Company Maintenance Shop	Brown & Caldwell	1987
Environmental Audit of 6/ 31st Infantry Maintenance Shop	Brown & Caldwell	1987
Hazardous Waste Stream investigation, Fort irwin Wastewater Treatment Plant	Brown & Caldwell	1987
Inspection of Infectious Waste Incinerator at FTIR-19 Medical Facility	Brown & Caldwell	1987
Preliminary Site Investigation - Sanitary Landfill	Brown & Caldwell	1987
Preliminary Site Investigation - Oxidation Ponds, Fort Irwin Wastewater Treatment Plant	Brown & Caldwell	1987
Report for the Solid Waste Disposal site	NBS/ Lowry Engineers and Planners	1987
Investigation of Soil Contamination at Building 830 (FTIR-35)	Almgren & Koptionak, Inc.	1986
Investigation of Soil Contamination at Building 909 (FTIR-26)	Almgren & Koptionak, Inc.	1986
Fort Irwin Sewage Treatment Plant; Spill Report	Dynalectrom Corporation	1986
Specification for Closure, Fire Fighting Training Facility (FTIR-20)	Wilson F. So & Associates	1986
Endangered and sensitive Species Survey and Deficiency Tabulation	Lee and Ro Consulting	1985
Engineers Report Solid Waste Disposal Site and Report of Disposal Site Information	Lowry and Associates	1985
Potential Violations as Observed during July 9 - 12, 1985 USEPA Inspection	US NTC	1985
Installation Assessment of Fort Irwin, CA; Report No. 320	Environmental Science and Engineering Inc.	1982
Desert Tortoise Biological Assessment for Current Mission at NTC	US NTC	1981
Engineering Services Required to Meet the Requirements of the California Regional Water Board for Waste Discharge, Goldstone	Pacific Soils Engineering, Inc.	1980
Geotechnical Investigation for Class II-1 Waste Disposal Site, Fort prepared for Bermite Division, Whittaker Corporation, Saugus CA	Leighton & Associates, Inc.	1979
Water resources Study and Water Distribution System for Goldstone	Jet Propulsion Laboratories	1962
Remediation Construction Specifications, Closure for HW Storage Facility 703	US NTC	no date

National Training Center and Fort Irwin

ER,A ELIGIBLE
OPEN
AEDB-R SITES

FTIR-01
INACTIVE/ACTIVE LANDFILL

SITE DESCRIPTION

FTIR-01 consists of an inactive disposal area, an active disposal area and a POL-contaminated soil disposal pile. This site is located east of the Main Cantonment on the south side of Sanitary Fill Road. The inactive disposal area (36 acres) is located at the northern portion of this site was used from the late 1940s to the 1980s. No records exist of the waste disposed. The active disposal area (18 acres), often referred to as the Current Active Landfill, is located at the southern portion of the site, has been used from 1993 to present. Records show that no hazardous waste was disposed of in this area. The 7-acre POL soil pile is located east of the inactive disposal area. The whole area is included in a RCRA subtitle D permit. A new, lined disposal cell (8 acres) was opened for disposal in 2001.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Chlorinated Solvents
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
FS
FUTURE IRP PHASE:
RD, RA, LTM

The groundwater detections of solvents and VOCs fluctuate in the wells used to monitor the area. Seven wells have had detections of VOCs, with one well having detections well above MCLs. It is probable that present day VOC detections are a result of activities that occurred prior to construction and permitting of the active disposal area in the 1990s.

The landfill area is approximately 1 mile upgradient of a production well. Preliminary results of the remedial investigation revealed that the hydrogeology in this area is extremely complicated. Numerous faults in this area are effecting groundwater flow direction.

RI activities were performed to develop a comprehensive model of the groundwater flow and contaminant transport in the area (partially funded in FY01 and FY02). The draft RI will be submitted to the state in FY04. This investigation included geophysical surveys and the installation of 17 additional wells (for a total of 23 GWM wells). UXO has been detected in some areas and is a concern at this site. Fault controlled hydrogeology complicates the issues at this site.

PROPOSED PLAN

Complete the RI report (FY05) and generate a FS report (FY06) to be submitted to the state for comment and review. Continued well sampling is planned. Our long-term plan is to determine if there is adequate justification to implement presumptive remedies or identify alternate remedies to be initiated in FY07.

FTIR-02
ABANDONED SANITARY LANDFILL 2

SITE DESCRIPTION

FTIR-02 is located northwest of the active sanitary landfill (FTIR-01) and is approximately 16 acres in size. The site was operated as a land disposal and open burning facility from 1940 to 1945. The site is divided into two separate areas (A & B). FTIR-02-A consists of a circular bermed feature in the eastern portion of FTIR-02. FTIR-02-B is a series of trenches oriented in a northeast to southwest direction in the southwestern portion of the site.

The types of debris disposed of at these two areas are similar and consist of burned material, broken glass, metal, charred wood, and ashes. Approximately 4.4 acres of the landfill have less than 2 feet of cover over its contents.

VOCs, SVOCs, pesticides, and dioxins/furans were detected at low concentrations. Metals are the primary constituents of concern. The analytical results of the soil samples taken indicate that the metals have not migrated more than 4 feet below the waste. Soil gas survey results indicate that landfill gases have not migrated from the site. Results from a GWM well installed downgradient of FTIR-02 indicate no GW contamination.

STATUS

RRSE RATING: Medium
CONTAMINANTS: POL, Paint, Solvents, Metals, Ordnance Waste, Transite (non-friable asbestos)
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS, 7 IRAs, RD, RA(C)
CURRENT IRP PHASE:
RIP (1999) with LTM
FUTURE IRP PHASE:
RIP (1999) with LTM

The RI/FS Report for FTIR-02 has been approved by the state of California. The Remedial Action Plan (RAP) was finalized in June 1997. Groundwater monitoring at this site began in 1994. Fencing around the perimeter of the landfill was installed in July 1997 as an IRA. The installation of an engineered soil cover was completed in 1999. The Closure Report and Final Operation and Maintenance Plan was approved in 2001. At present, there are 2 GWM wells at this site.

PROPOSED PLAN

Install two additional downgradient GWM wells to supplement the LTM program (FY05). Cap maintenance, cap repairs and groundwater monitoring will continue. Weather conditions each year may require additional repair funds for the caps.

FTIR-04
ABANDONED SANITARY LANDFILL 4

SITE DESCRIPTION

FTIR-04 is located immediately to the west of the active landfill (FTIR-01). Abandoned Landfill 4 is approximately 20 acres in size. The site operated as a land disposal and open burning facility from 1950 to 1980.

FTIR-04 consists of a northeastern bulk disposal area and a western trench area. The types of debris found in the western trenches consisted of household rubbish, construction debris, and miscellaneous equipment parts. In the northeastern burial area, construction material with some household debris and evidence of burning were found. Approximately 13 acres of the landfill has less than 2 feet of cover over its contents.

Low concentrations of VOCs, dioxins/furans, and metal compounds were identified at this site. The soil gas survey confirmed the presence of landfill gases within the landfill. However, only very low concentrations of methane gas were detected around the perimeter of the site.

STATUS

RRSE RATING: Low
CONTAMINANTS: POL, Paint, Solvents, VOCs, Metals, Ordnance Waste, Transite
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS, 7 IRAs, RD, RA(C)
CURRENT IRP PHASE:
RIP (1999) with LTM
FUTURE IRP PHASE:
RIP (1999) with LTM

The RI/FS Report for FTIR-04 was approved by the state of California. The Remedial Action Plan (RAP) was finalized in June 1997. A fence was installed in July 1997 as an IRA. The installation of an engineered soil cap was completed in 1999. The Closure Report and Final Operation and Maintenance Plan was approved in 2001. At present there are 4 GWM wells at this site.

PROPOSED PLAN

Cap maintenance, cap repairs and groundwater monitoring will continue. Weather conditions each year may require repair funds for the cap. Cap site with asphalt or other substance so that site to avoid long-term O&M costs.

FTIR-11
DRAINAGE PIT (BUILDING 830)

SITE DESCRIPTION

FTIR-11 is located near Building 830. Drainage from Building 830 was associated with the wash down of vehicle parts and the surrounding maintenance area. Petroleum products that had accumulated on the parts were removed using solvents. Chlorinated solvents were used extensively for this purpose prior to 1985.

The floor drainage channel inside the maintenance area carried the petroleum products and solvents to an underground sump. From 1968 to 1985, drainage was discharged from this sump through a 6-inch clay pipe. This pipe terminated into an earthen pit that was approximately 15 x 30 x 10 ft deep.

By 1986, the sump was cleaned out and filled with concrete, the inlets to the clay pipe was plugged with concrete, and the pit had been excavated. No confirmation samples were taken.

The CRWQCB issued a Cleanup and Abatement Order (#86-19) in 1986. In a response, soil samples were taken at FTIR-11. High concentrations of oil and grease were detected in these samples. The consultant recommended that no further action be taken, because of the limited exposure pathways. The soil contamination levels established in 1986 were found to be above cleanup levels, and, therefore, the CRWQCB disagreed with the consultant's recommendations for no further action. In 1988, the CRWQCB issued a Notice of Violation of CAO#86-19; it was subsequently recinded.

STATUS

RRSE RATING: High
CONTAMINANTS:
Oil, Grease, Metals, Solvents
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, 4 IRAs
CURRENT IRP PHASE:
RI/FS
FUTURE IRP PHASE:
RI/FS

In response, an RI was completed for the drainage pit in 1990. The conclusion of this study was that the organic compounds previously detected in the pit had apparently degraded to lower or non-detectable levels through the natural weathering process. Additional RI fieldwork was completed in June 1996 to evaluate the soil contamination under the pipe and sump and to determine if the groundwater had been impacted. This RI report was finalized in September 1998 and recommended NFA.

An IRA was performed in May 1997. The IRA consisted of decontaminating the floor drainage channel and filling in the channel with concrete. This eliminated the immediate health and safety risk resulting from the accumulation of POL products in the floor drainage channel within the welding shop.

Trace amounts of TCE were detected in the groundwater sample taken during the RI field work conducted in June 1996. Groundwater sampling was conducted at a nearby well in August 1997; no TCE was detected. Three drive samples were collected in June 1999; no TCE was detected. A permanent well was installed (funded in FY02) and groundwater was monitored for 4 quarters with no hits.

PROPOSED PLAN

In FY04, a letter outlining the data collected at this site will be submitted with the Army recommendation to the state, suggesting that no further action be taken at this site.

FTIR-27
BUNKER FUEL UST (NORTHWEST OF A AVENUE)

SITE DESCRIPTION

FTIR-27 is the former site of an underground storage tank (UST #72) which was abandoned in place in September 1988. The site is located at the old hospital site, northwest of A Avenue between 1st and 2nd Street; the old hospital building no longer exists.

The tank was removed in September 1988, but the vault which housed the tank remained in place. It was reported that approximately 5,200 gallons of bunker fuel remained in the vault at the time it was abandoned.

The vault was pulled in December 1989. In 1995, the majority of the contaminated soil was removed. The remaining contamination is under the road and natural attenuation was selected as the remedial alternative.

The County of San Bernardino does not consider this site closed. The County of San Bernardino deferred oversight to the CRWQCB in October 1998.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Bunker Fuel
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI, 5 IRAs
CURRENT IRP PHASE:
FS
FUTURE IRP PHASE:
RC

Fort Irwin's IRP requested closure in January 1999. This request was denied due to lack of information concerning remaining contamination. CRWQCB request confirmatory sampling; samples taken in 2000, detected TPH in the soil. In June 2002, DTSC requested a Fate and Transport Model for this site, which was completed in FY04.

PROPOSED PLAN

Cap maintanence and fencing needs to be completed at this site. The DD was funded in FY03, which will be completed after DTSC reviews the Fate and Transport Model. No further action is expected.

FTIR-38
GOLDSTONE LAKE MORTAR/SMALL ARMS RANGE

SITE DESCRIPTION

The site consists of two subsites located in the east-central portion of Goldstone Lake. No historical documentation is available regarding this site. Aerial photographs from 1947 indicate that the facility did not exist at the time. However, the 1979 aerial photographs show the current layout of the site.

Area 1 is located at grid coordinate NK102130 (on the lake bed), and is identified by two 200-ft long, lines of deteriorated wooden targets, and a circle of 55-gallon drums ~200 ft in diameter that were used as a target for shooting. A large number of small caliber (50 cal, 20mm) slugs and casings and several mortar rounds were scattered on the ground at this site.

Area 2 is located between grid coordinates NK103125 and NK106130, and consists of a series of 17 soil embankments on the east side of the lake bed that were apparently used as a backstops for target practice and an associated bermed area with a wooden observation tower. These berms are currently habitat for ground squirrels.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals (Lead)
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS, RD
CURRENT IRP PHASE:
RA(C)
FUTURE IRP PHASE:
RC

Fort Irwin's 259th EOD escorted members of the Environmental Division during a job walk at this site. They did not find any live ordnance during this visit.

Sampling to characterize this site was conducted in July 1997 and the report was finalized in December 1997. A Supplemental SI for this site was finalized in 1998. A Phase II SI sampling was conducted in FY99. The Draft RI/FS report was submitted to DTSC in May 2001.

Based on activities described in the RI/FS, a Performance Based Contract was awarded in FY04 for this site.

PROPOSED PLAN

Response complete will be achieved by July 2005.

FTIR-40
MOJAVE ANTI-AIRCRAFT RANGE HQ

SITE DESCRIPTION

This site is the original location for the Mojave Anti-Aircraft Range (MAAR). This site was in operation by 1943. Two subsites are located at the western edge of the Goldstone area.

One sub-site is located at grid coordinate NK071083, and consists of a small gully which contains some discarded metal debris. The main area of concern is a 10-ft diameter area containing ~10 inert artillery rounds. Small amounts of other miscellaneous debris (metal roadway fragments, etc.) were scattered.

The other sub-site is at grid coordinate NK079086, and consists of building foundations. A flagpole base at the site had the notation (MAAR 7/7/43) inscribed. A deep shaft (apparently a water well) was embedded in one of the building foundation slabs. A sump that may have been a septic tank was located adjacent to one of the foundation slabs. Various piles of domestic discards and construction debris were located ~50 ft south of the site. In 1999, a video camera found that the 'well' was plugged with concrete about 100 ft down, concrete was used to fill the hole to ground level.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals, Ordnance Waste, POL, Solvents
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS, RD
CURRENT IRP PHASE:
RA(C)
FUTURE IRP PHASE:
RC

Sampling to characterize this site was conducted in July 1997. The RI report was finalized in December 1997. Low levels of metals were detected in the vicinity of the septic tank, but none of these concentrations were above action levels. A Supplemental RI was finalized in 1998. A RI/FS report was finalized in late FY02; this report recommended limited soil removal from the gully subsite due to metal concerns. Based on activities described in the RI/FS, a Performance Based Contract was awarded in FY04 for this site.

PROPOSED PLAN

Response complete will be achieved by July 2005.

National Training Center and Fort Irwin

ER,A ELIGIBLE
WAITING FOR CLOSURE DOCUMENTATION
AEDB-R SITES

The following sites have documents pending to be approved for closure. They are listed as Response Complete (RC) in the AEDB-R because no further requirements are expected.

FTIR-07
LUCKY FUSE IMPACT DISPOSAL AREA

SITE DESCRIPTION

FTIR-07 is located near the hill known as “Hill 800” ~13 miles northeast of the main cantonment area. FTIR-25A has been combined with FTIR-07 due to geographic proximity and similarity of disposal activities.

This area was used for solid waste disposal and open burning/ open detonation activities during the period of 1966 through 1977. Abandoned OB/OD sites were also used from 1978 to 1985 by the 259th EOD Detachment. It is reported that bombs and other explosives captured by California police departments were brought to FTIR-07.

Very limited and somewhat contradictory information regarding the materials disposal of FTIR-07 has been found. Most of the documentation does not differentiate between FTIR-07 and FTIR-08 (Avawatz Valley Disposal Area). This site reportedly received large amounts of hazardous waste including, but not limited to, infectious wastes, solvents, tear gas, and explosives.

STATUS

RRSE RATING: Low
CONTAMINANTS: Waste Explosives, Waste Ordnance, Solvents, Berylium, TCE, Pentaborane, Kerosene, Metals, Nitrogen, Tetroxide, Ammonium Perchlorate, Infectious Wastes, Tear Gas, Perchloroethylene
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC

The Phase I RI field work was complete in June of 1996. The Phase I RI was finalized in September 1998. This action sampled 10 of the 19 subsites. Phase II RI work was conducted in June of 1998 and finalized in 1998. This action sampled the remaining 9 subsites, and did additional sampling at one of the subsites sampled in Phase I. No evidence of risk to human health or the environment were found. A Final Supplemental RI report was submitted to DTSC in June 2001, suggesting NFA. In FY04, NFA Closure reports for FTIR-07, 08, 22, 25E, 32, 35 and 39 were funded under this site. In FY04, decision document for FTIR-08, 22, 25E, 32, 35 and 39 will be sent to the state for signature.

FTIR-08
AVAWATZ VALLEY DISPOSAL SITE

SITE DESCRIPTION

FTIR-08 is located east of Granite Road along the northern base of the Granite Mountains. FTIR-08 covers an area ~2 square miles with five major subsites totaling 11 study areas. This area was used for solid waste disposal and open burning/open detonation activities from as early as 1941 to as late as 1980. This area is currently a no dig area due to various archaeological concerns.

Most of the documentation does not discriminate between the Avawatz Disposal Area (FTIR-08), Abandoned OB/OD Site (Avawatz Dry Lake Area) (FTIR-25E), and the Lucky Fuse Disposal Area (FTIR-07). One of these areas received large amounts of hazardous waste including but not limited to infectious wastes, solvents, tear gas, and explosives. See the Contamination Assessment Overview for more details.

The following information regarding disposal practices at FTIR-08 is based on the available documentation and employee interviews. FTIR-08 was used for the burning, detonation, or burial of solvents, POL products, solid rocket propellants containing high concentrations of beryllium, explosives, tear gas, acids, ethylene glycol monoethyl ether, volatile fluorine and chlorine compounds, and two chemical hauling trucks. In 1974, the Whittaker Corporation requested approval to dispose of ~2.5 metric tons per month of waste materials (propellants and other liquids), a portion of which consisted of high explosives.

STATUS

RRSE RATING: High
CONTAMINANTS: Solvents, POL, Solid Rocket Propellant, Metal, Flares, Explosives, Infectious Wastes, Tear Gas
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1999

A preliminary SI was completed in 1987, in which chromium was the only chemical of concern that was searched for. A chemical fixation technique was used to treat the contamination in place.

Phase I RI field work was completed in June 1996 and the report was finalized in October 1998. During the RI fieldwork, a well was drilled to 500 feet and no groundwater was encountered. Since groundwater at this site is greater than 500 feet down, it is no longer considered a media of concern. This RI sampled 7 of the 11 subsites with no significant contamination found. The RI report was finalized in 1998. Additional RI work was completed in June 1998. This RI sampled the remaining 4 subsites. A Final Supplemental RI report was submitted to DTSC in June 2001, suggesting NFA.

A NFA Closure report will be funded under FTIR-07.

FTIR-19
PATHOLOGICAL WASTE INCINERATOR

SITE DESCRIPTION

FTIR-19 is a 8 x 10 ft room located at Building 166, Weed Army Community Hospital. This site is the room that formerly housed the hospital's pathological waste incinerator.

The incinerator was operated from 1965 through 1984. The incinerator burned approximately 10 bags of pathological and/or infectious waste per day.

The incinerator operated under a San Bernardino County Air Pollution Control District permit, but did not have a RCRA Treatment, Storage, and Disposal Facility (TSDF) permit. Since infectious waste is classified as a hazardous waste in California, the incinerator was shut down in October, 1985 due to the lack of a TSDF permit. The ash was removed from the incinerator and disposed of at a Class I disposal facility. The incinerator was removed in 1988.

The Remedial Investigation field work was completed in June 1996. The RI Report was finalized in September 1998. Lead and chromium were only detected at trace levels. There does not appear to be any residual contamination from the operation of the incinerator.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1998

A Draft Final NFA RAP was submitted to DTSC in August 2000. A NFA Closure report will be funded under FTIR-07.

FTIR-22
TRINITY RANGE

SITE DESCRIPTION

FTIR-22 was used for open burning/open detonation of unexploded ordnance (~100,000 pounds per year). FTIR-22 consists of 11 subsites. The site was in operation from 1986 to 1992.

The areas used for these operations are approximately 30 x 50 ft for open burning and 1,000 x 1,000 ft for open detonation. The waste explosive/ordnance were open burned or detonated in pits. The ashes were left to collect in the bottom of the pits. Munitions are no longer being shipped to this site for disposal.

This site was a RCRA-regulated hazardous waste management unit, and also operated under a San Bernardino County Desert Air Pollution Control District air permit.

The two large OB/OD pits are currently going through RCRA closure but the nine smaller blowpits are being addressed by the Installation Restoration Program. No previous environmental investigations of the blowpits have taken place.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Ordnance and Explosive Residue, Metals Dioxins
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1998

The Remedial Investigation field work was completed in June 1996. The RI Report was finalized in 1998 with DTSC's approval. No evidence of risk to human health or the environment was found. A Final Supplemental RI report was submitted to DTSC in July 2001, suggesting NFA.

A NFA Closure report will be funded under FTIR-07.

FTIR-25E
ABANDONED OD SITE (AVAWATZ DRY LAKE AREA)

SITE DESCRIPTION

FTIR-25E was used for open burning/open detonation operations. The site is located at grid coordinate NK 4721 inside the active live fire training area. Subsite 25E-1 is located in the central portion of Avawatz Valley (No Name Lake Valley). Subsites 25E-2 through 25E-12 lie immediately adjacent to the main dirt road that passes through the valley (Granite Road).

There are conflicting reports of the date of operation of this site. Based on reports available, this area could have been used from 1941 to 1980.

The first phase of Remedial Investigation field work was completed in June 1996. The second phase of RI field work occurred in July 1997. Both investigations found no risk to human health or the environment.

STATUS

RRSE RATING: High
CONTAMINANTS:
Explosive Residue, Metals, Dioxin
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1998

It should be noted that during the RI for FTIR-08, which is located in the same area as FTIR-25E, a groundwater monitoring well was installed to a depth of 500 ft. This well never hit groundwater. As a result groundwater is not a media of concern for this site. A Final Supplemental RI report was submitted to DTSC in July 2001, suggesting NFA.

A NFA Closure report will be funded under FTIR-07.

FTIR-28
WASTE OIL UST (SOUTH LOOP, LANGFORD LAKE)

SITE DESCRIPTION

FTIR-28 is the former site of an underground storage tank (UST #136) which was removed in March 1989.

The UST was located at the south corner of the intersection of South Loop Road and Langford Lake Road. The distance to its former location is approximately 100 feet from each road.

The County of San Bernardino was onsite when this tank was pulled in 1989 and considers this site to be closed.

DTSC requested confirmatory sampling. These soil samples were taken in August 2000. Sample results were below action levels.

The sampling report was submitted to DTSC in September 2000. No further action is expected.

STATUS

RRSE RATING: Low
CONTAMINANTS:
VOCs, PAHs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS, IRAs
CURRENT IRP PHASE:
RC - 2001

FTIR-32
GOAT MOUNTAIN LANDFILLS

SITE DESCRIPTION

This site consists of two landfills, a diesel spill subsite and a former generator subsite located at Goat Mountain.

The upper landfill, approximately 30 x 10 ft, ~100 ft northeast of the Technical Operations Center. This landfill was created when a trailer was demolished. Since then other debris has accumulated at the area including paint cans, empty oil cans, etc.

The lower landfill, approximately 200 x 60 ft, located in a narrow valley in the general vicinity of grid coordinate NK498284. Rusted metal debris, including concertina wire, engineer's stakes, and training mines, anti-tank mines and smoke pots were observed at a site visit in the week of November 12, 1993. The period of operation is unknown but some of the materials found at this location are believed to be from the 1940s.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Ordnance Waste, VOCs, Metals, POL, Transite
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1998

Two generators, located at the top of Goat Mountain, leaked diesel. The generators have since been moved. The soil beneath the original location was excavated down to rock and approximately 3 cy of contaminated soil was disposed of in the current landfill. No known confirmatory samples were taken at that time.

The diesel spill subsite is located immediately adjacent to the Upper Goat Mountain Landfill. It has been indicated that approximately 28 cy of contaminated soil was excavated at this subsite (15 ft deep).

Soil samples were taken at the upper landfill in April 1997. Based on these results, there is no indication of any hazardous waste within the contents of the landfill.

During July 1997, sampling was conducted at the lower landfill, the generator subsite, and the diesel spill subsite. This report was finalized in 1997. A Supplemental SI report for the lower landfill was finalized in 1998 with no significant contamination found. The debris was removed from the Upper Landfill in 1999. A Final RI was submitted to DTSC in May 2001. No further action is required at these sites. A NFA Closure report was funded under FTIR-07.

FTIR-35
MOTORPOOL LUBRICATION PITS (BLDG 621 & 650)

SITE DESCRIPTION

FTIR-35 is the inactive motor pool lubrication pits located in the vehicle maintenance facilities at Building 621 and 650. These buildings are located northeast of 5th Street between Barstow Rd and South Loop Rd.

The lube pit at Building 621 has been filled with sand and is no longer in service. The pit is ~105 ft long and 3.5 ft wide.

The lube pit at Building 650 was covered with heavy metal sheets and cordoned off with chains. The pit was 30 ft long and 3.5 ft wide. The pit in Bldg. 650 was decontaminated, filled with sand, and capped with concrete in FY 97.

The Remedial Investigation field work was completed in June 1996. The RI Report was finalized in September 1998. No risk to human health or the environment was found.

A Draft Final NFA RAP was submitted to DTSC in August 2000.

A NFA Closure report was funded under FTIR-07.

STATUS

RRSE RATING: Low
CONTAMINANTS:
VOCs, Metals, POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, IRAs, RI/FS
CURRENT IRP PHASE:
RC - 1998

FTIR-39
GOLDSTONE LAKE ROCKET TESTING RANGE

SITE DESCRIPTION

FTIR-39 is located at grid coordinate NK098107 at the southern end of Goldstone Lake. This site was used for rocket testing from 1941 to the end of World War II.

The site consists of three rocket engine test stands and the associated observation facilities. The test stands consist of concrete pads, brackets, and/or walls which were apparently used for securing rocket engines or for deflecting rocket exhaust. Several of the walls have been constructed against soil berms. Each test stand covers roughly a 1000 sq. ft area.

The rockets were launched from the ground and from stationary aircraft on the ground. A variety of rockets were tested at Goldstone including the Antisubmarine rocket, the Barrage rocket, the High-Velocity Aircraft rocket, spin-stabilized rockets, and British rockets. At one time, up to one hundred rockets were fired per day.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals, Energetics
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1998

Sampling to characterize this site was conducted in July 1997 and the report was finalized in December 1997. A Supplemental SI was finalized for this site in 1998. Approval for no further action is expected from DTSC.

A NFA Closure report will be funded under FTIR-07.

FTIR-41
COMBAT ENGINEERS RANGE OB/OD SITE

SITE DESCRIPTION

The site lies in the general vicinity of grid coordinate NK219013. Evidence of prior ordnance detonation and/or burning has been observed.

The site is made up of 4 subsites. The 1st subsite is an area ~500 x 50-100 ft, along the south side of a major east-west trending alluvial wash, and occupies all of the area between the main wash channel and some low-lying hills of tuffaceous volcanic bedrock. Approximately 10 to 20 burnpits and/or blow pits were excavated into the sandy alluvium, along with a large amount of scrap vehicle parts and other materials (telephone pole stumps).

The 2nd subsite is located in a small wash ~500ft northwest of the main subsite. This subsite is known as the bazooka range, and contains additional scrap vehicle parts as well as a single blow pit ~30ft in diameter and 8ft deep.

STATUS

RRSE RATING: Medium

CONTAMINANTS:

Metals, dioxins, explosive residue

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI, RI/FS

CURRENT IRP PHASE:

RC - 1998

The 3rd subsite is located several hundred ft southeast of the first subsite. This subsite has several burn and/or detonation pits and discarded drums that apparently contained explosives or pyrotechnics. The period of operation is unknown. 55-gallon drums marked CWS were found near this subsite. After researching the markings on these drums, it was determined that these were just simulators and never contained chemical warfare substances.

The 4th subsite is located ~2,500 ft southeast of the intersection of Goldstone Road and NASA Road (Grid NK198039). It appears that flares and other ordnance were collected from the ranges, brought to this subsite, and burned. The period of operation is unknown. In some documents, this site was referred to as FTIR-42. This subsite has since been combined with FTIR-41.

The Remedial Investigation field work for this site was completed in June 1996. The RI Report was finalized in 1998. No risk to human health or the environment was found. A Final Supplemental RI report was submitted to DTSC in July 2001, suggesting NFA.

National Training Center and Fort Irwin

ER,A ELIGIBLE
RESPONSE COMPLETE
AEDB-R SITES

FTIR-03
ABANDONED SURFACE DISPOSAL AREA

SITE DESCRIPTION

FTIR-03 is located immediately to the east of the active landfill. This site is ~1.7 acres in size. This site was previously referred to as Abandoned Sanitary Landfill Number 3.

The site was thought to operate as a land disposal and open burning facility from 1950 to 1960. However, during the RI/FS no evidence of landfill activities were encountered. It was determined that FTIR-03 was used only as a surface disposal area. The random surface debris consisted of metal, crushed drums, cable, and spent munitions.

Diethyl Phthalate, Acetone, and several metals were detected in soils at concentrations above background levels. Soil gas survey results indicate that gases have not migrated from the site.

Results from a groundwater monitoring well installed downgradient of FTIR-03 indicate no evidence of groundwater contamination. Though the groundwater monitoring well used for this site is no longer needed, the installation has decided not to abandon it. It will be used to gather data for FTIR-01.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals, Ordnance, Transite
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS, RD, RA(C)
CURRENT IRP PHASE:
RC - 1998

The Final RI/FS Report for FTIR-03 has been approved by the state of California. The Remedial Action Plan (RAP) was finalized in June 1997. The alternative that was selected for FTIR-03 was surface restoration which included the removal of all surface debris. The surface restoration was completed in October 1997 and this has eliminated the potential for the direct contact with debris. DTSC's approval for no further action was received in May 1998.

FTIR-05
SUSPECTED ABANDONED LANDFILL

SITE DESCRIPTION

Originally FTIR-05 was believed to be a land disposal and open burning facility located to the southeast of the active sanitary landfill. It was believed to be 12 acres in size.

However, a 1981 U.S. Army drawing included in a 1993 report showed FTIR-05 as a circular area located to the west of FTIR-01 and FTIR-04 with an asphalt road leading to it.

An aerial ground penetrating survey was conducted at the location shown in the 1981 U.S. Army drawing during March, 1994. There was no evidence of landfill/burial activities in this area.

The description in the 1993 report is very similar to the semicircular scarred area inside FTIR-04's boundaries. It has been hypothesized that FTIR-05 is actually within the boundaries of FTIR-04

Because no evidence of landfill activities were found, the state of California and Fort Irwin considers FTIR-05 to be response complete.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
POL, Paint, Solvents, Metals, Ordnance Waste, Transite
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1992

FTIR-06
TROOP LANDFILL DISPOSAL SITE

SITE DESCRIPTION

FTIR-06 was used for solid waste disposal and possibly for open burning/ open detonation activities. The exact dates of operation of the landfill are unknown. The most recent documentation indicates that the landfill has not been used since 1980.

This site is located 17.5 miles from the cantonment area at UTM grid coordinate NK5012. FTIR-06 is ~2.2 acres in size.

The main part of the site is a 300 x 120 ft rectangular area of disturbed soil. A fence consisting of razor wire and cybor stakes was installed in August 1997. Within the fenced area, there is a pit running north to south and several spoil piles. The pit is 120 x 15 ft and 5-6 ft deep. The spoil piles are 2-6 ft high. There is a disturbed area south of the fenced area that has been determined not to be contaminated and is no longer considered part of FTIR-06. It should be noted that these spoil piles are home to several animals including kit fox, whip tail lizards and other wildlife. The Troop Landfill was constructed before the requirement for liners or leachate collection systems. Therefore, it is unlikely that this landfill has a liner. Previous studies show elevated levels of lead concentrations at this site.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Ordnance Waste, Metals, POL, Pesticides, Paint
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI/FS, RD, RA(C)
CURRENT IRP PHASE:
RC - 1999

The Remedial Investigation field work was completed in June 1996. The RI Report was finalized in 1998 and recommended conducting an Ecological Predictive Assessment. The report identified the contaminants of concern as PAHs (hydrocarbons), organochlorine pesticides, metals, and one dioxin. The RI report indicated that this site does not pose a threat to groundwater. A barrier to protect the wildlife habitat was constructed in 1999 (institutional controls).

FTIR-09
DDT/LEAD-BASED PAINT DISPOSAL

SITE DESCRIPTION

The existence of this site is questionable. This site's existence is based on an unsubstantiated description in a 1982 report. The site description was based on interviews with base personnel, but the interviewees were never cited in the report. The interviewees reportedly indicated that in 1973, 1,000 kilograms of DDT and 2,4-D were disposed of in an abandoned mine shaft in the Leach Lake area and 1,000 kilograms of lead-based paint were reportedly disposed of in the mine shaft or buried nearby.

In 1983, the CRWQCB requested that the NTC determine the disposal history of hazardous materials in the vicinity of Leach Lake. An investigation consisting of interviews and record reviews did not find any evidence to substantiate the report. It was recommended that this investigation be dropped. In 1986, the USEPA recommended additional investigation to locate and characterize this site.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
DDT, 2,4-D, Lead-based Paints
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

Based on known information regarding Fort Irwin's mines, six possible locations were identified. These locations have been investigated and no evidence of DDT or lead based paint disposal was found.

This site is Response Complete. If the site is ever located, it will be investigated.

FTIR-10
PESTICIDE MIXING AREA

SITE DESCRIPTION

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
Pesticides, Chlorinated Herbicides
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1996

FTIR-10, former Building H227, is a former pesticide mixing area located within what is now Building 360's yard. This site is in the main cantonment area. The pesticide control shop was operated by the California National Guard in this location from 1972-1980. Reportedly, numerous spills had occurred in the pest control shop area inside Building H227. It was reported that several cans of lindane had been leaking in 1980.

The storage area was exposed to the weather, unmarked, not bermed, and did not have an impervious floor. It did not conform to the U.S. Army Environmental Hygiene Agency guidelines for pesticide storage that were in effect at that time.

Building H227 was reportedly burned down in 1980 because of extensive contamination from pesticide spillage. An area 23 x 33 ft was excavated to 26 feet below ground surface (bgs). These soils were disposed of in the base sanitary landfill. The excavation was then backfilled with uncontaminated soil. No confirmation testing was done at the time of the excavation. The area has since been paved with asphalt. The site was first documented in the Installation Assessment of Fort Irwin in 1982. Soil samples for this site were collected in 1982 by USAEHA. Preliminary results indicated that 2,4,5-T (a chlorinated herbicide) concentrations were as high as 0.98 ppm.

The exact location of Building H227 is not currently known. Extensive effort has been made to identify the building's exact location but no information has been found.

Because the area is currently paved, institutional controls are adequate. This restriction will be annotated in the installation real property records. The Installation IRP Manager will periodically inspect the integrity of the paved surface. Therefore, this site is considered to be RC.

FTIR-12
WASTE ELECTROLYTE DISPOSAL PITS

SITE DESCRIPTION

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1998

FTIR-12 consists of two earthen waste electrolyte disposal areas.

FTIR-12A was used for the disposal of lead-acid battery electrolyte prior to 1979. This pit was located along the south side of Building 946, which no longer exists. The exact location of the pit has not been determined. An unknown quantity of battery electrolyte was discharged into this pit.

Soil sampling was performed near FTIR-12A in 1989. The samples were analyzed for total lead concentration and pH. The concentrations of lead ranged from 4.9 to 108 mg/kg. The pH values ranged from 8.4 to 8.8.

FTIR-12B is a soil and gravel covered area that is approximately 10 feet by 10 feet in size. This area is located near Building 941. Automobile batteries were recharged at this site from 1981 to 1985. The waste electrolyte from the batteries were mixed with baking soda and then dumped onto the ground at FTIR-12B. There have been no previous environmental investigations at FTIR-12B.

The RI fieldwork for both areas was completed in June 1996. The RI report was finalized in September 1998 with DTSC's approval. The NFA RAP was approved by DTSC in 2000.

FTIR-15
HW TEMPORARY STORAGE FACILITY (BUILDING 641)

SITE DESCRIPTION

FTIR-15 is located adjacent to the vehicle wash rack at Building 641. This site was used as a temporary sludge storage facility from 1987-1992.

The former wash water holding tank is a concrete sump that is ~40 x 70 x 12 ft deep. When the oil/water separator system was modified to a non- mode, this sump was converted to a temporary storage facility for the sludge collected from the oil water separators at other vehicle wash racks.

Sludge was reportedly removed from the Sewage Treatment Plant (FTIR-17) drying beds in 1987 and stored in this sump. This sludge was analyzed and found to be EP toxic (a waste classification test specified by RCRA) because of its high metal concentration.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals, POL
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1997

The sludge in the sump was removed and disposed of through Environmental Technologies of Nevada, Inc. in 1992. The sump was decontaminated and has not been used since.

Based upon investigation, a suspected UST was not located underneath the building. The installation began upgrading this wash rack in 1998. As a result, the installation conducted soil sampling at this site in 1997. The report was finalized in August 1997. An isolated, low level PCE concentration was detected in a soil sample adjacent to the sump. This detection is not believed to be associated with the storage of sludge in this sump and will be addressed during the RCRA closure of this wash rack.

FTIR-16
PCB TRANSFORMER STORAGE AREA

SITE DESCRIPTION

FTIR-16 is a former PCB transformer storage area located on the northwest side of the Building 360 complex. FTIR-16 encompasses an area approximately 35 feet square and is located between Building 359 and 360. This outdoor storage area was operated during the period from 1969 through 1983.

The site was located within a fenced area. The storage area was not bermed and did not have an impervious floor. This storage area did not meet U.S. EPA regulations in effect at that time. The area has since been asphalt paved.

All of the PCB transformers that were stored in this area have been removed.

STATUS

RRSE RATING: Low
CONTAMINANTS:
PCBs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1998

The field work for the RI Phase was completed in June 1996. The RI report was finalized in September 1998.

No PCBs were detected at this site. There does not appear to be any residual contamination resulting from the storage of PCB transformers. The NFA RAP was approved by DTSC in 2000.

FTIR-18
ABANDONED SEWAGE OXIDATION PONDS

SITE DESCRIPTION

FTIR-18 consists of the two oxidation ponds for the old sewage treatment plant which was in operation during the period from 1940 through 1954.

The old plant was located west of the active sanitary landfill. It is located ~200 ft from Sanitary Fill Road between Barstow Road and Outer Loop Road. The oxidation ponds were estimated to be 150 x 300 ft, and were abandoned with clay pipe inlet and outlet lines. None of the original facilities, such as buildings, remain. Records of the types of waste discharged to these ponds are not available. The sludge may have been removed from the ponds at the time of abandonment.

The site was used as a picnic and recreation area in the 1980s. The site was converted to a storage area for trucks and trailer in the mid-1980s.

In 1989, soil samples were collected in the top foot of soil. The composite sample for Pond B had an oil and grease concentration of 290 mg/kg. Low concentrations of DDT and its metabolites were also detected in Pond B's composite sample.

The Remedial Investigation field work was completed in June 1996. The RI Report was finalized in September 1998. The installation began paving this area with concrete in 1999, under the Rotational Washrack Facility and the RUFMA Improvement projects (MCA). The NFA RAP was approved by DTSC in 2000.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Metals, Nitrates, Pesticides, PCBs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1999

FTIR-20
ABANDONED FIRE FIGHTER TRAINING FACILITY

SITE DESCRIPTION

FTIR-20 is an earthen pit located northeast of the intersection of Bicycle Lake Road and Barstow Road. For a typical training exercise, ~300 gallons of water was used to flood the site. Then, a 100-150 gallon mixture of one part gasoline and five parts diesel fuel was added and ignited. The fire was allowed to build to its maximum intensity before the fire fighters extinguished it. The exercises were discontinued in October, 1986.

Investigations of the site have been performed in accordance with CRWQCB Cleanup and Abatement Order #6-89-45 (issued February 21, 1989). Soil and groundwater investigation were conducted by Ft. Irwin from August 1989 to October 1992. Four groundwater monitoring wells were installed. A closure plan was prepared and was found to be incomplete and unacceptable to the CRWQCB.

In July 1992, additional soil and groundwater investigations were conducted by Sacramento District COE (CESPK). Two more wells were installed. The results of the investigation were correlated with those from earlier investigation and were found to be consistent. An exposure assessment was performed to evaluate the risk to human health and the environment. The assessment concluded that the contaminants in the soil were at low concentrations in very localized areas and would not impact groundwater quality.

STATUS

RRSE RATING: Low
CONTAMINANTS:
TPH
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1997

Nitrate was detected in the groundwater at the up gradient monitoring well. The source of nitrate is unknown. Nitrate concentrations will be monitored by the installation under their basewide groundwater quality monitoring program. Based on these findings, CESPK proposed no further remedial action be taken and a five years groundwater monitoring plan. This proposal was accepted by the CRWQCB.

In December 1995, the CRWQCB rescinded the Cleanup and Abatement Order. The state of California officially closed out this site in 1996. Four of the six groundwater monitoring wells were abandoned in May 1997. The remaining wells will remain open so that the installation may utilize them in additional groundwater modeling efforts.

FTIR-23
LUCKY FUSE IMPACT AREA OD SITE

SITE DESCRIPTION

FTIR-23 was used for open detonation of unexploded ordnance (~11,000 pounds per year) during the period from 1985 through 1993. FTIR-23 is located in the active training area.

This site consists of two OB/OD craters. Based on interviews with Army personnel, these sites were used by a contractor for open detonation.

FTIR-23A is located 2 miles north of Granite Pass. FTIR-23A consists of a single detonation crater that is 20 ft in diameter and 3 ft deep. FTIR-23B is located on the southern edge of Avawatz Valley. This site is located in the active live fire area.

Any future action will be addressed when the range area is closed.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Residue, Metals, Dioxins
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1992

FTIR-24
CAS 6 OD SITE (NK345305)

SITE DESCRIPTION

This site is located in the active training area at grid coordinate NK 345305. FTIR-24 was used for open detonation of unexploded ordnance (approximately 20,000 pounds per year). This site was used by a contractor from 1985 to 1992 for open detonation.

Three craters are clearly visible at this site. The largest crater is 20 ft wide and 5 ft deep. The other two are ~10 ft wide and 5 ft deep

Any future action will be addressed when the range area is closed.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Metals, Dioxins, Explosive Residue
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1992

FTIR-25B
ABANDONED OLD SITE (LEACH LAKE RANGE)

SITE DESCRIPTION

FTIR-25B is located in the northern section of Fort Irwin known as Leach Lake Air to Air and Air to Ground Gunnery Range. FTIR-25B was used for the open detonation of waste powder and unexploded ordnance from 1976 to 1983. During this time frame, Leach Lake Range was controlled by George AFB through an Interservice Support Agreement with the U.S. Army.

This site consists of two munitions burial pits. These pits were originally used by personnel from George AFB during the U.S. Air Force's range clearing activities. This site is no longer active. When George AFB closed in 1992, Nellis AFB assumed responsibility for the Leach Lake range including the burial pits.

This site is currently being used as an active bombing range.

Any future actions at this site will be conducted by the Air Force (Nellis AFB).

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
Residue, Metals, Dioxins
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FTIR-25C
ABANDONED OD SITE (GARY OWEN IMPACT AREA)

SITE DESCRIPTION

FTIR-25C was used for the open detonation of waste powder and unexploded ordnance in 1985. The site is located in the northwest section of Fort Irwin near the Granite Mountains inside the active training area. It is centered on grid coordinate NK1630 in the Gary Owen Impact Area. Thirteen potential OB/OD sites have been identified at this site.

Until the land use changes, institutional controls are expected to be sufficiently protective.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Metals, Dioxins, Explosive Residue
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FTIR-25D
ABANDONED OD SITE (LANGFORD IMPACT AREA)

SITE DESCRIPTION

FTIR-25D was used for open burning/open detonation operations. The site is located in the southeast corner of Fort Irwin inside the active training area. It is centered on NK 4392 in the Langford Impact Area.

There is conflicting information regarding the dates of operation. But based on the information available, this area was used from 1982 to 1984.

Thirteen potential OB/OD sites have been identified at this site.

Until the land use changes, institutional controls are expected to be sufficiently protective.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Residue, Metals, Dioxins
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FTIR-25F
ABANDONED OD SITE (NELSON IMPACT AREA)

SITE DESCRIPTION

FTIR-25F was used for open detonation of waste powder and unexploded ordnance. The site is located in the central section of Fort Irwin inside the active training area, east of the Nelson Lake Airfield between grid coordinates NK 3117 and NK 3118. Nine potential OB/OD pits have been identified at this site. There is conflicting information regarding the dates of operation. But based on the information available, this area was used from 1982 to 1985.

Until the land use changes, institutional controls are expected to be sufficiently protective.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
Metals, Dioxins, Explosive Residue
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FTIR-26
GASOLINE UST (BUILDING 909)

SITE DESCRIPTION

FTIR-26 is an underground storage tank (UST #47) which was closed in place in September 1985 at the automobile service station at Building 909; the tank was estimated to have a 10,000-gallon capacity.

The tank was reported to be leaking approximately 150 gallons per month for the nine-month period prior to closure. The tank was closed in place in 1985 with approval from the San Bernardino County Department of Environmental Health Services.

A complete investigation of the site in 1993, including soil sampling and analysis with borings to a depth of 58 feet below ground surface, was completed. No hazardous constituents were detected above the regulatory limits. The tank was removed in conjunction with the removal of the adjacent tanks and the site was clean closed in 1993.

The County of San Bernardino issued a closure letter for this site in May 1993.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
Gasoline
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS, RD, RA(C)
CURRENT IRP PHASE:
RC - 1993

FTIR-29
GASOLINE UST (BUILDING 384)

SITE DESCRIPTION

FTIR-29 is the former site of a 10,000 gallon underground storage tank (UST #83) which was removed in March 1989. The tank was located on 5th Street inside the fence for Building 384 (The County references Building 390.)

The County of San Bernardino was on site when the tank was pulled in 1989. Further studies were conducted at this site to insure that all the tanks and piping associated with this “gas station” were removed. No evidence of additional tanks or piping was found. The County considers this site closed.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
Gasoline
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS, 4 IRAs
CURRENT IRP PHASE:
RC - 1995

FTIR-31
STORAGE TANKS, WASTE OIL

SITE DESCRIPTION

FTIR-31 reportedly included thirty-one waste oil “tanks” which were located at various facilities at Fort Irwin. The tanks consisted of water buffaloes used to store waste oil. A water buffalo is a trailer mounted metal tank that was typically used to store and transport water. All of these waste oil storage “tanks” were removed in 1985. An area where some of the water buffaloes were parked was excavated to form a level parking lot. There was no evidence that any of these tanks were leaking.

Since this site no longer exists, a letter stating this site is closed was sent to DTSC in August 1997. No further action is required at this site.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
POL, Bunker Fuel
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1993

FTIR-33
FIELD SUPPORT SITE

SITE DESCRIPTION

FTIR-33 is located at grid coordinate NK487272 inside the active training area. Two 600-gallon ASTs were used for waste oil storage. These tanks were relocated in 1992.

Approximately 300 CY of contaminated soil were reportedly excavated. However, there is no documentation of any soil samples taken at that time.

The Remedial Investigation field work (soil samples) was completed in June 1996. The RI Report was finalized in September 1998 with DTSC’s approval. No risk to human health or the environment was found.

DTSC approved “no further action” at this site in April 2001.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Diesel, Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1998

FTIR-34
GOLDSTONE FORMER ECHO STATION LANDFILL

SITE DESCRIPTION

FTIR-34 is a landfill, ~500 x 200 ft near the Echo Station space tracking complex at grid coordinate NK188067 within the Goldstone Deep Space Complex boundary.

This site was used for disposal purposes from approximately 1951, when Echo Station was built, to 1975. Based on documentation available, this landfill has only been used by NASA.

The materials disposed of at this site primarily consisted of paper, food, trash, cables, wire, and solvents. All materials were burned prior to burial.

A known fault zone cuts through the bedrock near the site. This may complicate efforts to characterize and remediate the site.

The first phase of the Remedial Investigation field work was completed in June 1996. The RI Report was finalized in October 1998.

Because this site was only used by NASA (as a tenant of Fort Irwin), NASA has taken responsibility for any future action.

STATUS

RRSE RATING: Medium
CONTAMINANTS:
TPH, VOCs, Metals, Pesticides, Dioxins, Solvents
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI, RI/FS
CURRENT IRP PHASE:
RC - 1998

FTIR-36
MATES COMPOUND DISPOSAL SITE

SITE DESCRIPTION

FTIR-36 is a scrap metal pile located 50 yards southeast of the southeast corner of the Mobilization and Training Equipment Site (MATES) Compound fence. This site appears to be an old hard target. It is not known when this site was first used, or for what duration. The site does not appear to consist of anything more than scrap metal.

The Remedial Investigation field work was completed in June 1996. The RI Report was finalized in September 1998.

During the RI, the hard target was removed so that the area with the greatest potential for contamination could be sampled. Since the only contaminants of concern were metals, the hard target was disposed of with the other hard targets being brought in from down range.

No risk to human health or the environment was found.

No further action was approved by DTSC in April 2001.

STATUS

RRSE RATING: Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA/SI, RI
CURRENT IRP PHASE:
RC - 1998

National Training Center and Fort Irwin

NON-ER,A ELIGIBLE
RESPONSE COMPLETE
AEDB-R SITES

FTIR-13
HW STORAGE FACILITY (BUILDING 703)

SITE DESCRIPTION

FTIR-13 is a 90-day hazardous waste accumulation area. This site is located at Building 703 and has been in operation since 1983.

HAZCO, the hazardous waste service contractor on post, regularly collects all hazardous materials/wastes that are generated by Fort Irwin facilities. The hazardous wastes are stored at this facility prior to off-post disposal through the Defense Reutilization and Marketing Office.

The area is fenced with a lockable gate and includes a concrete pad with a berm which is enclosed on three sides.

FTIR-13 underwent a RCRA closure in 1995. It has since been re-opened as an active facility.

This site is considered an active site and is not eligible for ER,A funding.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS:

Heavy Metals, Industrial Waste, Acid, Paint, POL Solvents, PCBs

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC - 1995

FTIR-14
HW TEMPORARY STORAGE FACILITY (BUILDING 630)

SITE DESCRIPTION

FTIR-14 is located at Building 630 and has been in operation since 1983.

HAZCO, the hazardous waste service contractor, routinely collects all hazardous wastes generated by Fort Irwin activities. Building 630 is used as a central collection point for storage of only the POL wastes. All other hazardous waste are stored at Building 703. All of the wastes are then disposed of through the Government's disposal agent, Defense Reutilization and Marketing Office.

This site is co-located with a vehicle wash rack. There is no fence and part of the area is not paved or bermed. In the past, waste POL containers have been observed on top of the waste oil storage tank and around the oil/water separator. At that time, discolored soils were observed on the unpaved areas at the site.

This site underwent a RCRA closure in 1997. It has since been re-opened as an active facility.

This site is considered an active site and is not eligible for ER,A funding.

STATUS

RRSE RATING: Not Evaluated

CONTAMINANTS:

POL Wastes, Acid, Heavy Metals

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI, RI

CURRENT IRP PHASE:

RC - 1995

FTIR-17
SEWAGE TREATMENT PLANT

SITE DESCRIPTION

FTIR-17 consists of the Sewage Treatment Plant (STP) which is located east of the Main Cantonment, south of the active sanitary landfill.

FTIR-17 includes the contents of the abandoned anaerobic digestor, former waste piles (sludge drying areas and construction debris storage areas), and nitrate contamination of groundwater under the abandoned oxidation ponds.

The STP was in operation from 1954 to 1995. The waste piles were used from 1983 to 1985.

The STP includes a grit chamber and comminutor, primary sedimentation clarifiers, secondary treatment oxidation ponds, and anaerobic digestion. The design flow rate was 1,900,000 gallons/day. The five-day Biological Oxygen Demand in the effluent averaged 40 mg/L.

The STP operates under RWQCB Board Order Number 6-93-43, and effluent monitoring is in accordance with this order.

This STP was taken off line in 1995, but has not been officially closed. This site is still considered an active site and not eligible for ER,A funds at this time. Therefore, this site requires no further action under the IRP.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
Metals, Nitrates, Pesticides, PCBs
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1995

FTIR-30
WASHRACK HOLDING POND, 2/11TH MOTORPOOL

SITE DESCRIPTION

FTIR-30 is located by Building 682. The site is the holding pond for the 2/11th Armored Cavalry Regiment's, formerly the 1/63rd Infantry, wash racks.

The pond is approximately one-half acre, is concrete-lined, and used for storage of wash rack effluent. The pond was in operation from 1988, and is currently active.

This site is being considered for closure within the next few years under the RCRA program.

This site was active throughout most of the ER,A program to date, it is not eligible for ER,A funding. Therefore, this site requires no further action under the Installation Restoration Program.

STATUS

RRSE RATING: Not Evaluated
CONTAMINANTS:
Gasoline, Solvents
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA/SI
CURRENT IRP PHASE:
RC - 1995

National Training Center and Fort Irwin

MMRP SITES

FTIR-001-R-01
COMBAT ENGINEER'S RANGE OB/OD AREA

SITE DESCRIPTION

This site is located behind the equestrian center and Boy Scout camp recreation area.

This site was at one time known as FTIR-041in the ER,A program. It was listed as response complete in 1998. Area has signs to limit access.

The Engineer's Combat Range OB/OD area is located within the non-A/I area and approximately half of the former range is located on the Goldstone Deep Space Complex. The portion of the range located outside the Goldstone Deep Space Complex is currently part of a recreational area. No reports of ordnance were located. However, the portion of the Engineer's Combat Range OB/OD area located within the Goldstone Deep Space Complex remains undeveloped and access to this area is controlled. Therefore, it is possible that OE hazards remain in both the surface and subsurface in the portion of the former range that overlaps the Goldstone Deep Space Complex. The site of the former OB/OD area is now used as a recreational area. In addition, Goldstone Road borders the northern boundary of the property. Although base personnel now use this area for recreation, there are no buildings on the site. The cantonment area is just over one mile away. There are schools, residences, office buildings, restaurants and shops within a two-mile radius.

STATUS

CERCLA
RRSE RATING:
1 High Risk
SIZE: 1,527 acres
CTT STATUS: Closed
TOPOGRAPHY: Gently Rolling
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Mortars, HE
Ground Rockets, Rifle Grenades, Live
Blasting Caps, Fuzes, Boosters, or Bursters Hand Grenades, Practice
Small Arms, complete round (.22 cal -.50 cal)
Small Arms, expended
Propellants (Solid, Liquid)
Flares, signals, simulators, screening smokes (other than WP)

FTIR-002-R-01
BOMBING RANGE 1

SITE DESCRIPTION

The assumption was made that OE is located in the subsurface because a May 1, 1945, Demobilization Study, Vicinity and Range Map was annotated in 1948 to indicate that the 9088th TSU-CE, DET. #15 Bomb and Shell Disposal Team had dedudded the range. The eastern edge of the cantonment area is located approximately 0.5 miles from the Bombing Range 1. According to a 1984 General Reservation map, the eastern portion of the cantonment area consists of troop and family housing, along with administrative and maintenance buildings. The former range is located ~0.5 miles from the edge of the cantonment area. The cantonment area has a diameter of ~2.5 miles. Thus, the OE hazard area is within two miles of the majority of the cantonment area, which consists of troop and family housing, recreational areas, grade schools, a trailer park, a hospital and administrative and maintenance buildings. Fort Irwin's cantonment area, which is located within two miles of Bombing Range 1, consists of residential, medical, administrative, maintenance and recreational areas.

STATUS

CERCLA
RRSE RATING:
4 Low Risk
SIZE: 332 acres
CTT STATUS: Closed
TOPOGRAPHY: Gently Rolling
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Bombs, Practice

FTIR-003-R-01
GALCIT AND ORDCIT PROJECTS AREA

SITE DESCRIPTION

This site is listed in the ER,A program as FTIR-38 Goldstone Lake Mortar/Small Arms Range and FTIR-40 Mojave Anti-Aircraft Range HQ. Both of these sites will be listed as response complete in July 2005 under the ER,A program.

This site was used during the 1940s and 1950s and much of the area remains undeveloped. During a site visit to the Goldstone Lake Mortar/Small Arms Range conducted under the IRP program, many .50 caliber and 20mm slugs and casings and several mortar rounds were reportedly collected along the sub-site. Due to the nature of the terrain, it is possible that additional items might rise to the surface.

STATUS

CERCLA
RRSE RATING:
2 Serious Risk
SIZE: 17,371 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Medium Caliber (20mm, 25mm, 30mm), HE
Mortars, HE
Aerial Rockets, Practice
Ground Rockets, Rifle Grenades, Practice
Small Arms, expended

FTIR-004-R-01
SMALL ARMS RANGE

SITE DESCRIPTION

This site is also known as the K-D Range and was active in the 1960s. It was sampled and cleared in 2003. The site is now used as a housing area under the Residential Communities Initiative (RCI).

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 1,925 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Small Arms, expended

FTIR-005-R-01
CLOSE COMBAT COURSE

SITE DESCRIPTION

The Close Combat Course is located on the western boundary of Fort Irwin, which has been leased to NASA since 1958. The Installation Ammunition Manager stated that the remnants of pop-up targets and bunkers are located at the site. Much of the complex remains undeveloped, and there is a possibility that both surface and subsurface OE hazards remain. This area is near a recreation area used by Fort Irwin personnel. The nearest inhabited buildings are located on Fort Irwin's cantonment area, which is ~4.5 miles from the former range.

STATUS

CERCLA
RRSE RATING:
4 Low Risk
SIZE: 1,256 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Hand Grenades, Practice
Small Arms, expended

FTIR-006-R-01
MOJAVE ANTI-AIRCRAFT RANGE HQ

SITE DESCRIPTION

This site is listed in the ER,A program as FTIR-40 under the same title. This site will be listed as response complete in July 2005.

The site is located in the Goldstone Deep Space Complex, which is currently leased to NASA. The majority of the Complex is undeveloped, so it is possible that OE hazards remain on both the surface and subsurface. Barstow Road, which goes through the cantonmment area, is located approximately four miles from the Mojave Anti-Aircraft Range HQ. The nearest inhabited buildings, located in Fort Irwin's cantonment area, are ~8 miles from the DMM site. A fence encloses the property used by NASA. Although no construction is anticipated, possible changes may occur due to the nature of the site, which is open desert. It is assumed that erosion can possibly cause the items to surface.

STATUS

CERLA
RRSE RATING:
4 Low Risk
SIZE: .14 acre
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Medium Caliber (20mm, 25mm, 30mm), HE

FTIR-007-R-01
PISTOL RANGE

SITE DESCRIPTION

Located within the “industrial” portion of the cantonment.

MUNITIONS USED

Small Arms, expended

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 18 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

FTIR-008-R-01
HAND GRENADE RANGE

SITE DESCRIPTION

Although hand grenades have been found in the area, they were found before the buildings were constructed at the site. It was decided that any remaining hand grenades would be located below the surface. This former range is now part of the cantonment area and buildings have been constructed on and around the property. Although the former range is open to anyone on base, buildings now cover most of the site. Construction at the site has been completed,

STATUS

CERCLA
RRSE RATING:
2 Serious Risk
SIZE: 33 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Hand Grenades, Live
Hand Grenades, Practice

FTIR-009-R-01
MINIATURE ANTI-AIRCRAFT RANGE NO.1

SITE DESCRIPTION

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 1 acre
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Small Arms, Expended

FTIR-010-R-01
MINIATURE ANTI-AIRCRAFT RANGE NO.2

SITE DESCRIPTION

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 1 acre
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Small Arms, Expended

FTIR-011-R-01
GOLDSTONE SUB CALIBER RANGE

SITE DESCRIPTION

STATUS

RRSE RATING:
5 Negligible Risk
SIZE: 69 acres
CTT STATUS: Closed
TOPOGRAPHY: Gently Rolling
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Small Arms, Expended

FTIR-012-R-01
CARBINE TRANSITION RANGE

SITE DESCRIPTION

Located in current training/staging area and is considered a part of the range area.

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 451 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

MUNITIONS USED

Small Arms, Expended

FTIR-013-R-01
COMBAT RANGE 1

SITE DESCRIPTION

Located in training/staging area and is still considered part of the range.

MUNITIONS USED

Small Arms, Expended

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 2,106 acres
CTT STATUS: Closed
TOPOGRAPHY: Flat
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

FTIR-015-R-01
COMBAT RANGE 2

SITE DESCRIPTION

Located just off edge of installation boundary.

MUNITIONS USED

Small Arms, Expended

STATUS

CERCLA
RRSE RATING:
5 Negligible Risk
SIZE: 4,102 acres
CTT STATUS: Transferred
TOPOGRAPHY: Gently Rolling
SOIL TYPE: Sand/Gravel sand
VEGETATION: Barren/low grass
GW DEPTH: 150 ft

Schedule

PAST MILESTONES

1982 - Installation Assessment Completed

1989 - GWM started at FTIR-01

1991 - Preliminary Assessment of installation initiated

1993 - RC for FTIR-26

1994 - GWM started at FTIR-02, 03, 04

1995 - RC for FTIR-13, 14, 17, 27, 28, 29, 30, 31
- Preliminary SI completed for FTIR-06, 07, 08, 09, 10, 11, 12, 15, 16, 18, 19, 22, 23, 24, 25A, 25C, 25D, 25E, 25F, 32, 33, 34, 35, 36, 38, 39, 40, 41

1996 - RI/FS completed for FTIR-02, 03, 04, and 05
- RC for FTIR-05, 10, and 25B
- Community Relations Plan completed
- Sampling conducted at FTIR-06, 07, 08, 11, 12, 16, 18, 19, 22, 25E, 33, 34, 35, 36, 41

1997 - IRAs completed for FTIR-02, 04, 11 and 35
- RAP completed for FTIR-02, 03, and 04
- RD started for FTIR-02 and 04
- RA completed at FTIR-03
- RC for FTIR-15, 20, 23, 24, 25C, 25D, and 25F
- RC for FTIR-09 (until site is located)
- Sampling conducted at FTIR-25E, 32, 38, 39, 40
- Draft SI completed for FTIR-06, 22, 25E, 32, 34, 38, 39, 40, 41
- Draft RI completed for FTIR-07, 08, 11, 12, 16, 18, 19, 33, 34, 35, 36

1998 - RI complete for FTIR-07, 08, 25A, 25E.
- SI complete for FTIR-06, 11, 12, 16, 18, 19, 22, 33, 34, 35, 36, 41.
- Data Summary complete for FTIR-32, 38, 39, 40.
- Draft SI for FTIR-32A, 38, 39,40.

1999 - RA complete for FTIR-02, 04, 06.
- RI complete for FTIR- 11.

FUTURE MILESTONES

2007 - All RAs funded.

Schedule

PAST MILESTONES

1982 - Installation Assessment Completed

1989 - GWM started at FTIR-01

1991 - Preliminary Assessment of installation initiated

1993 - RC for FTIR-26

1994 - GWM started at FTIR-02, 03, 04

1995 - RC for FTIR-13, 14, 17, 27, 28, 29, 30, 31
- Preliminary SI completed for FTIR-06, 07, 08, 09, 10, 11, 12, 15, 16, 18, 19, 22, 23, 24, 25A, 25C, 25D, 25E, 25F, 32, 33, 34, 35, 36, 38, 39, 40, 41

1996 - RI/FS completed for FTIR-02, 03, 04, and 05
- RC for FTIR-05, 10, and 25B
- Community Relations Plan completed
- Sampling conducted at FTIR-06, 07, 08, 11, 12, 16, 18, 19, 22, 25E, 33, 34, 35, 36, 41

1997 - IRAs completed for FTIR-02, 04, 11 and 35
- RAP completed for FTIR-02, 03, and 04
- RD started for FTIR-02 and 04
- RA completed at FTIR-03
- RC for FTIR-15, 20, 23, 24, 25C, 25D, and 25F
- RC for FTIR-09 (until site is located)
- Sampling conducted at FTIR-25E, 32, 38, 39, 40
- Draft SI completed for FTIR-06, 22, 25E, 32, 34, 38, 39, 40, 41
- Draft RI completed for FTIR-07, 08, 11, 12, 16, 18, 19, 33, 34, 35, 36

1998 - RI complete for FTIR-07, 08, 25A, 25E.
- SI complete for FTIR-06, 11, 12, 16, 18, 19, 22, 33, 34, 35, 36, 41.
- Data Summary complete for FTIR-32, 38, 39, 40.
- Draft SI for FTIR-32A, 38, 39,40.

1999 - RA complete for FTIR-02, 04, 06.
- RI complete for FTIR- 11.

FUTURE MILESTONES

2007 - All RAs funded.

NO FURTHER ACTION SITES

FTIR-03	ABANDONED SURFACE DISPOSAL AREA
FTIR-05	SUSPECTED ABANDONED LANDFILL
FTIR-06	TROOP LANDFILL DISPOSAL SITE
FTIR-07	LUCKY FUSE IMPACT DISPOSAL AREA
FTIR-08	AVAWATZ VALLEY DISPOSAL
FTIR-09	DDT/LEAD-BASED PAINT DISPOSAL
FTIR-10	PESTICIDE MIXING AREA
FTIR-12	WASTE ELECTROLYTE DISPOSAL PITS
FTIR-13	HW STORAGE FACILITY (BUILDING 703)
FTIR-14	HW TEMPORARY STORAGE FACILITY (BUILDING 630)
FTIR-15	HW TEMPORARY STORAGE FACILITY (BUILDING 641)
FTIR-16	PCB TRANSFORMER STORAGE AREA
FTIR-17	SEWAGE TREATMENT PLANT
FTIR-18	ABANDONED SEWAGE OXIDATION PONDS
FTIR-19	PATHOLOGICAL WASTE INCINERATOR
FTIR-20	ABANDONED FIRE FIGHTER TRAINING FACILITY
FTIR-22	TRINITY RANGE
FTIR-23	LUCKY FUSE IMPACT AREA OD SITE
FTIR-24	CAS 6 OD SITE (NK345305)
FTIR-25B	ABANDONED OD SITE (LEACH LAKE RANGE)
FTIR-25C	ABANDONED OD SITE (GARY OWEN IMPACT AREA)
FTIR-25D	ABANDONED OD SITE (LANGFORD IMPACT AREA)
FTIR-25E	ABANDONED OD SITE (AVAWATZ DAY CARE AREA)
FTIR-25F	ABANDONED OD SITE (NELSON IMPACT AREA)
FTIR-26	GASOLINE UST (BUILDING 909)
FTRI-28	WASTE OIL UST (SOUTH LOOP, LANGFORD LAKE)
FTIR-29	GASOLINE UST (BUILDING 384)
FTIR-30	WASH RACK HOLDING POND, 2/11TH MOTORPOOL
FTIR-31	STORAGE TANKS, WASTE OIL
FTIR-32	GOAT MOUNTAIN LANDFILLS
FTIR-33	FIELD SUPPORT SITE
FTIR-34	GOLDSTONE FORMER ECHO STATION LANDFILL
FTIR-35	MOTOR LUBRICATION PITS (BUILDING 621 & 650)
FTIR-36	MATES COMPOUND DISPOSAL SITE
FTIR-39	GOLDSTONE LAKE ROCKET TESTING RANGE
FTIR-41	COMBAT ENGINEERS RANGE OB/OD SITE

National Training Center and Fort Irwin IRP Schedule

(Based on current funding)

Current Phase **Future Phase**

		FY05	FY06	FY07	FY08	FY09	FY10	FY11+
FTIR-01	RI/FS							
	RD							
	RA							
	LTM							
FTIR-02	LTM							
FTIR-04	LTM							
FTIR-11	RI/FS							
FTIR-27	RI/FS							
FTIR-38	RA							
FTIR-40	RA							

Remediation Activities

COMPLETED REM/IRA/RA:

IRA at FTIR-02 and FTIR-04 In June 1997, a fence was constructed around these two abandoned landfills to limit access to these sites. Construction Cost (FY96 funds)

RA at FTIR-02 and FTIR-04 Trenches/disposal pits were located on aerial photos and by EM survey. The work plan and a water quality monitoring/sampling plan were prepared as part of the remedial investigation. Soil and groundwater sampling was conducted to determine if any hazardous substances or constituents have been released to the environment. The Remedial Action Plan was finalized in June 1997. RD for the engineered soil cap was completed in 1998. The RA of an engineered soil cap and drainage controls is being constructed in FY99.

Removal at FTIR-03 Soil and groundwater sampling was conducted to determine if any hazardous substances or constituents have been released to the environment. During this investigation it was determined that this area was used for surface disposal only. The Remedial Action Plan was finalized in June 1997. During October 1997, the surface debris found at this site was removed.

RA at FTIR-06 The RA to protect wildlife was constructed in FY99.

IRA at FTIR-11 During May 1997, the floor drainage channel in Building 830 was decontaminated and filled in with concrete to eliminate a potential source and a health and safety hazard.

IRA at FTIR-35 During May 1997, the motor lubrication pit at Building 650 was decontaminated, filled in with sand, and capped with concrete to eliminate a potential source and a health and safety hazard.

Removal at FTIR-36 The State of California has agreed to clean close this site if the hard target and related scrap metal debris was removed and confirmatory samples that were taken do not show that excessive metals are present in the soil. The debris was removed in June 1996. The preliminary sampling results indicate that no further action will be required.

CURRENT REM/IRA/RA:

None

FUTURE REM/IRA/RA:

RA at FTIR-01 Groundwater treatment such as air stripping.

RA at FTIR-38, 40 Soil removal.

Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

Fort Irwin does not currently have a Restoration Advisory Board (RAB) or a Technical Review Committee. The installation has surveyed the surrounding community on several occasions (most recently in 1997) and has determined that there is currently no community interest in forming a RAB.

During community interviews in 1993, the local residents and politicians indicated that they would prefer to receive updates in the mail instead of participating in a RAB.

In November 1996, the installation mailed out its first fact sheet on the Installation Restoration Program. A RAB survey was included with this fact sheet. The fact sheet and the RAB survey are included in this document. The installation received one response. This was insufficient to justify the formation of a RAB.

In December 1996, two articles on the IRP were published in local newspapers. One article was published in the post newspaper, The Tiefort Telegraph, and one was published in The Daily Press, a newspaper for the High Desert. Both articles are included in this document. The articles encouraged anyone that was interested in forming a RAB or had questions regarding Fort Irwin's IRP to contact the installation. The installation did not receive any response from either article.

The Draft Remedial Action Plan (RAP) for FTIR-02, -03, and -04 was released for a 30-day public comment period (21 April 97 - 21 May 97). A public informational meeting was held on 28 April 97. Both the public meeting and the comment period were advertised in local newspapers and through radio public service announcements. The individuals on Fort Irwin's IRP Mailing list were notified in writing. No comments were received and no one from the community attended the public meeting.

Fort Irwin will continue to monitor the public's desire to form a RAB and will react accordingly. Future surveys will be conducted to determine the public's interest in Fort Irwin's IRP.